

Appendix A

First Principles of Instruction¹

Task-centered principle

- Learning is promoted when instruction is in the context of **whole real-world tasks**.
- Learning is promoted when learners are engaged in a **task-centered** instructional strategy involving a **progression** of whole real-world tasks.

Activation principle

- Learning is promoted when learners **activate** relevant cognitive structures by being directed to recall, describe or demonstrate relevant **prior knowledge** or experience.
- Activation is enhanced when learners recall or acquire a **structure** for organizing the new knowledge, when this structure is the basis for guidance during demonstration, is the basis for coaching during application, and is a basis for reflection during integration.

Demonstration principle

- Learning is promoted when learners observe a **demonstration** of the skills to be learned that is **consistent** with the type of content being taught.
- Demonstrations are enhanced when learners are **guided** to relate general information or an organizing structure to specific instances.
- Demonstrations are enhanced when learners observe **media** that is relevant to the content and appropriately used.

Application principle

- Learning is promoted when learners engage in **application** of their newly acquired knowledge or skill that is **consistent** with the type of content being taught.
- Application is effective only when learners receive intrinsic or corrective **feedback**.
- Application is enhanced when learners are coached and when this **coaching** is gradually withdrawn for each subsequent task.
- Application is enhanced when learners observe **media** that is appropriately used.

Integration principle

- Learning is promoted when learners **integrate** their new knowledge into their everyday life by being directed to reflect-on, discuss, or defend their new knowledge or skill.
- Integration is enhanced when learners create, invent, or explore **personal ways** to use their new knowledge or skill.
- Integration is enhanced when learners **publicly demonstrate** their new knowledge or skill.

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